IN THE CLAIMS:

1. (Amended) A method ~~for producing lightweight, high strength carbon aerogel composites,~~ comprising:

infiltrating ~~a polymer liquid~~ a solution containing a plurality of carbon aerogel precursors into a pre-formed polymer foam, or fiber-mat;

allowing ~~the liquid~~ said solution to gel such that it encapsulates at least part of the pre-formed polymer foam or fiber-mat to form a gelled composite;

drying the gelled composite to form a dried composite; and ~~such that the surface tensile forces are reduced, and~~

pyrolyzing the dried composite ~~wherein both of the polymers decompose simultaneously such that the polymers remain essentially in contact at their interfaces~~ to form a monolithic glassy carbon material.

2-3. (Cancel)

4. (Amended) The method of Claim 1, wherein allowing ~~the polymer liquid~~ said solution containing a plurality of carbon aerogel precursors to gel is carried out at a temperature of 80°C and a time period of 110 minutes.

5. (Cancel)

6. (Original) The method of Claim 1, wherein drying the gelled composite is carried out by evaporation.

7. (Amended) The method of Claim 6, wherein the evaporation is carried out ~~at a temperature of~~ in the temperature range of 20°C to 80°C and for a time period of 12 to 48 hours ~~depending on the composition and size of the gelled composite~~.

8. (Amended) The method of Claim 1, wherein pyrolyzing the dried composite is carried out in a furnace ~~at a temperature of~~ in the temperature range of 700 to 1100°C and for a time period of 8 to 12 hours.

9-17. (Cancel)

18. (New) The method of Claim 1, wherein said drying is carried out by supercritical carbon dioxide exchange.

19. (New) A composite material consisting essentially of:

a matrix of porous carbon aerogel in intimate contact with a plurality of solid carbon struts or fibers.